

The future of Buried Infrastructure: making the most of new opportunities in sensor and data technologies

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Globally, much of our existing buried infrastructure is ageing and becoming at risk of serious and catastrophic failure. The consequences of which range from major disruption to crippling loss of critical infrastructure much of which is contained with the near sub-surface. The cost and impact of such failures has the potential to be far ranging, and the recent moves to greater dependence of critical infrastructures through the recent pandemic (e.g. communications and electricity), exposes society to even greater risk here. Thrown in climate change and we almost have the perfect storm.

Vital to preventing these worse case scenarios is a need to rethink the way we engineer and through this manage our legacy buried infrastructure, much of which sits in busy top metre of so of the urban subsurface environment. A range of approaches have been developed to help engineers and planners to visualize what lies within the near subsurface from, which better management of the existing buried infrastructure and future works (which have the potential to damage the infrastructure) can take place. Going forward though a key question needs to be addressed, namely are we making the most of this space and the tools that will enable this to happen in real time.

In this talk, a range of methods to help achieve this will be presented, through which the potential to provide a dynamic asset monitoring through machine learning and AI approaches. This will show how current buried infrastructure can be monitored and utilized in a better fashion and from this key lessons needed to ensure society continues to benefit from a well-functioning buried infrastructure base going forward into the future.